

### **REMARKS**

This amendment is responsive to the Office Action of November 20, 2007. Reconsideration and allowance of claims 1-20 are requested.

### **The Office Action**

Claims 1-7 and 11-13 stand rejected under 35 U.S.C. § 102 as being anticipated by Jesmanowicz (US 6,294,972).

Claims 8-10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Jesmanowicz.

### **The Present Amendment**

The specification has been amended to add reference numeral 2 in the discussion of Figure 2 and reference numeral 3 in the discussion of Figure 3. It is submitted that this amendment to the specification fully addresses the Examiner's objection to the drawings.

### **The Present Application**

The present application is concerned with correcting inhomogeneities in the RF or  $B_1$  field (page 2, lines 12-18). These  $B_1$  field inhomogeneities, which become particularly apparent at higher field strengths, are due to an asymmetry in the electrical conductance of the patient in the transverse direction or xy-plane (page 4, lines 1-6). By making the electrical conductance of the patient in the xy-plane more isotropic, the  $B_1$  or RF field is rendered more homogeneous (page 4, lines 12-15).

### **The Jesmanowicz reference**

Jesmanowicz is concerned with shimming the  $B_0$  main magnetic field in order to make it more uniform within the imaging volume defined by a head coil 8. The  $B_0$  field is customarily rendered more homogeneous by placing small shims of ferromagnetic material at various positions along the imaging volume and around the imaging volume. Various techniques have been described in the art to facilitate initially placing and adjusting the placement of these ferromagnetic shims.

Jesmanowicz is directed to a technique for placing these ferromagnetic shims. Jesmanowicz marks a grid on a Mylar sheet 70, which grid marks positions along a length of the head coil and radially around it. Ferroshim inserts 72, e.g. nickel foil patches are bonded to the Mylar sheet 70 at the appropriate locations. Alternately, pockets may be defined in the Mylar sheet for receiving the ferroshims 72. Once the ferroshim inserts have been bonded or otherwise placed on the Mylar sheet 70, the Mylar sheet is wrapped around the RF coil assembly concurrently positioning all the shims. (col. 5, lines 44-67).

Thus, Jesmanowicz is concerned with shimming the  $B_0$  main magnetic field; whereas, the present application is concerned with rendering the  $B_1$  RF fields more homogeneous.

**The Claims Distinguish Patentably  
Over the References of Record**

Claim 1 calls for an electrically conductive material to be placed within the cavity, which material has a conductivity and thickness which render the total conductance in the xy-plane within the cavity to be isotropic. By distinction, Jesmanowicz does not address adjusting the total conductance in the xy-plane. Rather, Jesmanowicz bonds or inserts ferroshim inserts in the form of nickel foil pieces into appropriate locations mapped on a Mylar sheet 70 to shim the  $B_0$  field in a head coil. There is no suggestion or discussion in Jesmanowicz of adjusting the conductance in an xy-plane to render such conductance more isotropic. As discussed above, the significance of rendering the conductance more isotropic is that it renders the  $B_1$  or RF field more homogeneous.

Accordingly, it is submitted that claim 1 and claims 2-13 dependent therefrom are neither anticipated by nor obvious over Jesmanowicz.

New claims 14-20 have been added to claim inventive concepts more completely.

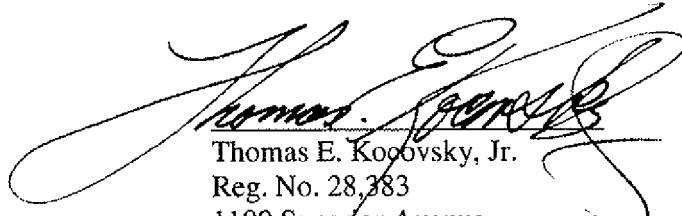
**CONCLUSION**

For the reasons set forth above, it is submitted that all claims distinguish patentably over the references of record and meet all statutory requirements. An early allowance of claims 1-20 is requested.

In the event the Examiner considers personal contact advantageous to the disposition of this case, she is requested to telephone Thomas Kocovsky at (216) 861-5582.

Respectfully submitted,

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